

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

1. (Currently Amended) A kneadable and moldable bone-replacement material which consists of a mixture of:

A) calcium-containing ceramic particles wherein the ceramic particles comprise a calcium to phosphate ratio having a molar Ca/P relationship between 1.0 and 2.0, wherein the calcium phosphate is selected from the following group: dicalcium phosphate dihydrate ( $\text{CaHPO}_4 \cdot 2\text{H}_2\text{O}$ ); dicalcium-phosphate ( $\text{CaHPO}_4$ ); alpha-tricalcium-phosphate ( $\alpha\text{-Ca}_3(\text{PO}_4)_2$ ); beta-tricalcium-phosphate ( $\beta\text{-Ca}_3(\text{PO}_4)_2$ ); calcium-deficient hydro-xylapatite ( $\text{Ca}_9(\text{PO}_4)_5(\text{HPO}_4)\text{OH}$ ); hydro-xylapatite ( $\text{Ca}_{10}(\text{PO}_4)_6\text{OH}$ ); carbonated apatite ( $\text{Ca}_{10}(\text{PO}_4)_3(\text{CO}_3)_3(\text{OH})_2$ ); flourapatite ( $\text{Ca}_{10}(\text{PO}_4)_6\text{F}_2$ ); chlorapatite ( $\text{Ca}_{10}(\text{PO}_4)_6\text{Cl}_2$ ); whitlockite; tetracalcium phosphate ( $\text{Ca}_4(\text{PO}_4)_2\text{O}$ ); oxyapatite ( $\text{Ca}_{10}(\text{PO}_4)_6\text{O}$ ); beta calcium pyrophosphate ( $\beta\text{-Ca}_2(\text{P}_2\text{O}_7)$ ); alpha calcium pyrophosphate; gamma calcium pyrophosphate; and octo-calcium-phosphate ( $\text{Ca}_8\text{H}_2(\text{PO}_4)_6 \cdot 5\text{H}_2\text{O}$ ); wherein a bulk density of the ceramic particles is between  $0.6 \text{ g/cm}^3$  and  $1.0 \text{ g/cm}^3$ ; and wherein an average diameter of the ceramic particles is between 100 and ~~250~~ 500  $\mu\text{m}$ ; and

B) a hydrogel or a substance that can be swelled into a hydrogel, and wherein:

C) the ceramic particles are of fully synthetic origin;

D) the individual ceramic particles have ~~at least a partially cohesive, porous structure a~~  
porosity of 60 percent to 90 percent; and

E) the majority of the ceramic particles have a non-spheric shape.

2. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the ceramic particles have an angular shape.
3. (Previously Presented) The bone-replacement material in accordance with claim 1, the ceramic particles have a sphericity relationship  $S = D_{\max}/D_{\min}$  between a largest diameter  $D_{\max}$  and a smallest diameter  $D_{\min}$  which is larger than 1.2.
4. (Previously Presented) The bone-replacement material in accordance with claim 3, wherein the sphericity relationship  $S$  is larger than 3.
5. – 16. (Canceled)
17. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein a share of ceramic particles of non-spheric shape is at least 60%.
18. – 20. (Canceled)
21. (Currently Amended) The bone-replacement material in accordance with claim 1, wherein further including the ceramic particles having have an average diameter of 250 micrometers to 500 micrometers and/or ceramic particles having an average diameter of 0.5 to 5.6 mm.
22. – 25. (Canceled)
26. (Withdrawn) The bone-replacement material in accordance with claim 1, wherein the ceramic particles consist of a mixture of different calcium-phosphates.
27. – 30. (Canceled)
31. (Previously Presented) The bone-replacement material in accordance with claim 1, further comprising metallic or semi-metallic ion shares as additives.

32. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel consists of fully synthetic substances.

33. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel consists of natural biological substances, preferably of plant origin.

34. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel consists of a biotechnologically generated substance.

35. (Previously Presented) The bone-replacement material in accordance with claim 32, wherein the hydrogel or the substance which can be swelled into a hydrogel consists of a mixture of fully synthetic, natural biological or biotechnologically generated substances.

36. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel contains one of the following components: a) polyamino-acids or their derivatives, preferably polylysine or gelatin; b) polysaccharides and their derivatives; c) polylipides, fatty acids and their derivatives; d) nucleotides and their derivatives; or a combination of the components as listed in a) through d).

37. (Withdrawn) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel contains one of the following components: a) polymethylenoxide or its derivatives; b) polyethylene, polyethylenoxide or their derivatives; c) polypropylene, polypropylenoxide or their derivatives; d) polyacrylate or its derivatives; or a combination of the components as listed in a) through d).

38. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein the hydrogel or the substance which can be swelled into a hydrogel consists of either a glycosaminoglycan or a proteoglycan or a mixture of those two substances.

39. (Previously Presented) The bone-replacement material in accordance with claim 38, wherein the glycosaminoglycan is a hyaluronic acid, chondroitinsulfate, dermatansulfate, heparansulfate, heparin or keratansulfate.

40. (Currently Amended) The bone-replacement material in accordance with claim 1, wherein ~~a concentration of the ready-to-use, hydrated~~ hydrogel or ~~a ready-to-use, hydrated~~ the substance which can be swelled into a hydrogel is present in a concentration from ~~between~~ 0.1% ~~and to~~ 20.0%.

41. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein a molecular weight of the hydrogel or the substance which can be swelled into a hydrogel larger than 300,000 Dalton.

42. (Previously Presented) The bone-replacement material in accordance with claim 41, wherein the molecular weight of the hydrogel or the substance which can be swelled into a hydrogel is larger than 1,000,000 Dalton.

43. (Currently Amended) The bone-replacement material in accordance with claim 1, wherein the hydrogel ~~is~~ comprises a liquid solution of a hyaluronate.

44. (Previously Presented) The bone-replacement material in accordance with claim 43, wherein the liquid solution of the hydrogel contains less than 99% water.

45. (Previously Presented) The bone-replacement material in accordance with claim 43, wherein the liquid solution of the hydrogel contains less than 96.5% water.

46. (Previously Presented) The bone-replacement material in accordance with claim 43, wherein the molecular weight of the hyaluronic acid used is larger than  $1.5 \times 10^6$  Dalton.
47. (Previously Presented) The bone-replacement material in accordance with claim 43, wherein the molecular weight of the hyaluronic acid used is between  $0.5 \times 10^6$  and  $1.0 \times 10^6$  Dalton.
48. (Previously Presented) The bone-replacement material in accordance with claim 43, wherein the molecular weight of the hyaluronic acid used is smaller than  $1 \times 10^6$ .
49. (Currently Amended) The bone-replacement material in accordance with claim 1, wherein a specific gravity of the calcium-containing, porous ceramic particles is between 0.5 and 1.0 g/ccm.
50. (Previously Presented) The bone-replacement material in accordance with claim 1, wherein a weight relationship A/B between the hydrated hydrogel and the calcium-containing ceramic particles is larger than 0.2.
51. (Previously Presented) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is between 0.2 and 0.5.
52. (Withdrawn) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is between 0.5 and 0.9.
53. (Withdrawn) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is between 0.9 and 1.3.
54. (Withdrawn) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is between 1.3 and 2.0.
55. (Withdrawn) The bone-replacement material in accordance with claim 50, wherein the weight relationship A/B is between 2 and 5.

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56. (Withdrawn) The bone-replacement material in accordance with claim 50, wherein the weight relationship  $A/B$  is larger than 5.